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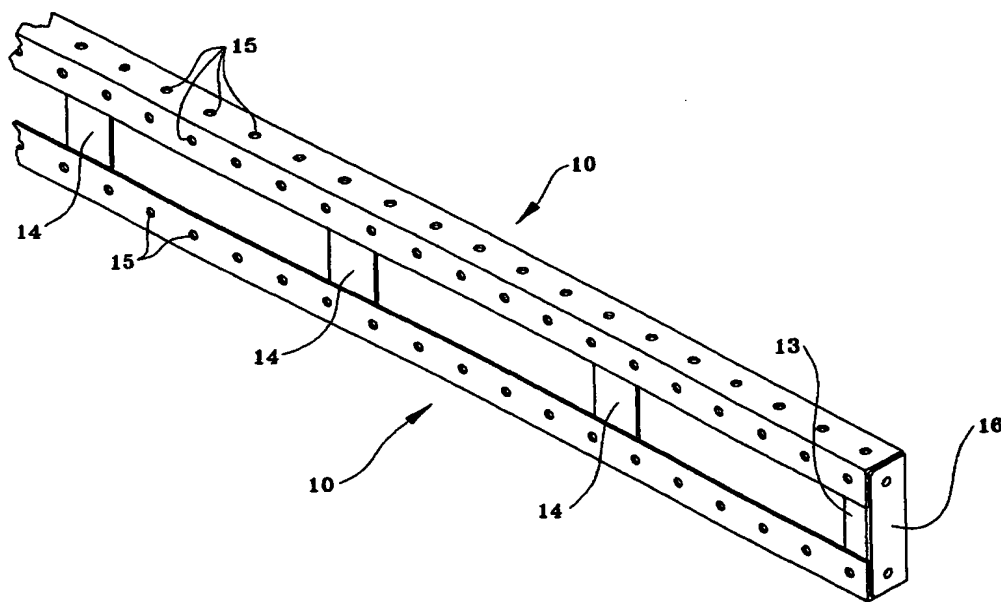
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(54) Title: MULTI-PURPOSE STRUCTURAL COMPONENT



(57) Abstract: A fabricated structural component for skeletal framework of structures, having five substantially planar faces corresponding to five faces of an elongated rectangular prism, namely a front face, two side faces and two end faces, the component comprising two elongate rolled steel angle elements (10), and a plurality of discrete spacers (13, 14) extending between the angle elements, and end elements (16). Each flange of the angle element (10) is pierced by a plurality of equi-distanced fastener clearance holes (15), and the end elements (16) are pierced by two fastener clearance holes.

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MULTI-PURPOSE STRUCTURAL COMPONENT

Technical Field

5 This invention relates to prefabricated structural components adapted to be assembled to form various demountable building and other structures.

Background Art

10 Toy construction kits are known wherein a plurality of identical components are provided adapted to be assembled together in a variety of ways to form models of a great variety of different articles and structures. Usually the individual components are adapted to be held together by inter-engaging formations providing some frictional restraint on disengagement. Alternatively
15 specific coupling pieces adapted to be similarly engaged with two or more basic components may be provided. In some instances the structural integrity of the finished model depends upon the simultaneous inter-engagement of more than two components.

20 The present invention is not concerned with the assembly of model structures but rather with the assembly of full scale, load bearing, skeletal frameworks of buildings and engineering structures generally.

 Therefore, possibly more relevant prior art is the well-known
25 demountable scaffolding used for temporary ancillary structures at building construction sites. Such scaffolding comprises a multiplicity of basic tubular members and many and varied coupling elements for fastening the basic members together. Typically the coupling elements comprise clamps, pins extending through clearance holes in the members and temporarily held in place
30 by cross-cotter pins, U-shaped straps on the members adapted to be aligned to receive wedges and other quick release, fastening devices. The coupling

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elements and the adaptations of the basic members of such scaffolding to their associated coupling elements frequently displays considerable ingenuity providing for the rapid assembly and disassembly of the scaffolding without the need for tools or anything but the most basic of tools, such as a hammer.

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Summary of Invention

The emphasis in prior known scaffolding is on the quick assembly and disassembly of individually lightweight members able to be manhandled into position. Thus, strength in the finished scaffolding is ensured by using a considerable number of closely spaced members. This renders conventional scaffolding components unsuitable for use in demountable structures that substantially replicate the load bearing, skeletal structures of finished buildings and the like.

15

An object of the present invention is to provide multi-purpose, demountable and re-useable structural components that may be used in the construction of temporary buildings or other structures at construction sites adapted for habitation or normal use by building workers and others during the construction of permanent structures at the site in question.

20

Typically the components of the invention may be used as columns and/or beams in demountable structures such as: protective pedestrian walkways adjacent to construction sites; site offices, possibly integrated with such walkways; multi-storey towers providing access and service facilities to the various floors of a multi-storey building under construction; garages; storage sheds; barracks; and like temporary building ancillaries required at civil engineering construction sites.

25

According to one aspect, the invention consists in a fabricated structural component having five substantially planar faces corresponding to five faces of

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a an elongated rectangular prism, namely an elongated side face, including two longitudinally extending edge margins, two elongated edge faces, and two end faces;

wherein each said side face is pierced by a plurality of fastener clearance
5 holes arranged in two straight rows, each extending longitudinally of a
respective one of said margins, wherein the holes in each row in said side face
have a constant centre to centre pitch distance, wherein the distance from the
centre of each end hole in each row of holes in said side face to a respectively
10 adjacent end face of the component is substantially one half of said pitch
distance, wherein the distance from the centre line of each row of holes in said
side face to a respectively adjacent edge face of the component is substantially
one half of said pitch distance, and wherein the centre lines of the rows of holes
in said side face are separated by a distance substantially equal to a whole
number multiple of said pitch distance;

15 wherein each said edge face is pierced by a plurality of fastener clearance
holes arranged in a straight row extending longitudinally of said each edge face,
wherein the centre to centre distance between the holes in the row in said each
edge face equals said pitch distance, wherein the distance from the centre of
each end hole in the row of holes in said each edge face to a respectively
20 adjacent end face of the component is substantially one half of said pitch
distance, and wherein the distance from the centre line of the row of holes in
said each edge face to the side face of the component is substantially one half of
said pitch distance; and

wherein each end face is pierced by at least two fastener clearance holes,
25 wherein the distance from the centre of each of said at least two holes in each
end face to said side face is substantially one half of said pitch distance and
wherein the distance from the centre of each of said at least two holes in each
end face to a respectively adjacent edge face is substantially one half of said
pitch distance.

According to a second aspect of the invention, it consists in a fabricated structural component, having six substantially planar faces corresponding to the sides of an elongated rectangular prism, comprising two components, each according to the first aspect of the invention, united by a plurality of discrete, spaced apart spacer means, such that corresponding edge faces of the two components according to the first aspect are spaced apart and co-planar, and wherein the spacer means are such that the distance between the centre lines of the rows of holes in each pair of corresponding edge faces is a whole number multiple of said pitch distance.

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It is pointed out that the whole number referred to in the above description of structural components according to the second aspect of the invention may or may not have the same value as the whole number referred to in the description of structural components according to the first aspect of the invention.

15

In preferred embodiments of the first aspect of the invention the component is fabricated from two, angle sectioned elements, each comprising two flanges meeting at substantially a ninety degree included angle, for example lengths of rolled structural steel angle, spaced apart and rigidly held together by discrete and spaced apart spacer plates extending between and welded to co-planar flanges of the two elements. Thus two parallel, spaced apart, co-planar flanges of the two elements constitute the margins of said side face, and the other flanges of the two elements respectively constitute the said edge faces. Of course, this spaced apart angle construction carries through to preferred embodiments of the second aspect of the invention. This is an important feature of the preferred embodiments as it provides hand access to the interior of components according to the second aspect of the invention, and facilitates such access to the side of a component according to the first aspect remote from an assembler of the components when putting together a structure made of components according to the invention. Such access is convenient, when

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assembling the components using removable fasteners in the form of bolts and nuts, to enable both the head of each bolt and a nut threaded on it to be simultaneously engaged by appropriate spanners.

5 By way of example two embodiments of the above-described invention are described in more detail hereinafter with reference to the accompanying drawings.

Brief description of the Drawings

10

Figure 1 is a perspective view of an end portion of a structural component according to the first aspect of the invention.

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Figure 2 is a front elevation of the component of figure 1, drawn to a smaller scale.

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Figure 3 is both a plan view and an inverted plan view of the component of figure 2, in that the component is identical in appearance when viewed from above or below.

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Figure 4 is an end elevation of the component of figure 2.

Figure 5 is a sectional view taken on line 5-5 of figure 2, drawn to a larger scale.

Figure 6 is a view similar to figure 1 of a component according to the second aspect of the invention.

30

Figure 7 is both a front and a rear elevation of the component of figure 6, in that the component is identical in appearance when viewed from the front and the rear, drawn to a smaller scale.

Figure 8 is an end elevation of the component of figure 7.

Figure 9 is a sectional view taken on line 9-9 of figure 7.

5

Best Mode of putting the invention into effect.

10 The multi-purpose structural component illustrated by figures 1 to 5 inclusive comprises two identical, elongated angle sectioned elements 10, each comprising side flanges 11 and edge flanges 12 (see figure 5), and a plurality of discrete and spaced apart spacer plates 13 and 14 extending between and welded to co-planar flanges 11 of the two angle sectioned elements. Thus, the two angle sectioned elements 10 are held rigidly together in a parallel, spaced apart configuration. The two, co-planar flanges 11 together constitute longitudinally
15 extending margins of the side face of the structural component (and for that reason have been captioned side flanges herein), whereas each of the flanges 12 constitutes an edge face of the component, (and for that reason have been captioned edge flanges herein).

20 The two angle sectioned elements 10 are further held and rigidified by end spacer plates 16, constituting the end faces of the component now being described.

25 Each of the side flanges 11 and each of the edge flanges 12 is pierced by a straight row of fastener clearance holes 15 extending longitudinally of the respective flanges. In accordance with the invention, and as indicated in figures 2, 3 and 5, the holes 15 in each row are spaced apart by a common, centre to centre, pitch distance "p", the distance from the centres of the end holes in each row to their respectively adjacent ends of the component is "p/2",
30 the distance from the centre line of the row of holes in each edge flange 12 to the side face of the component is "p/2", and the distance from the centre line of

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each row of holes in the side flanges 11 to their respectively adjacent edge face is also " $p/2$ ". Moreover the spacer plates 13, 14 and 16 are such that the distance between the centre lines of the rows of holes in the side flanges 11 is " np ", where " n " is a whole plural number. In the illustrated embodiment " n " is 2, but in other embodiments it may be 1 or a number larger than 2.

Furthermore, each end spacer plate 16 is pierced by two fastener clearance holes 15, and, as may best be seen in figure 5, the centres of those two holes are spaced from the side face and from their respectively adjacent edge faces by " $p/2$ ".

In other examples of the invention, the end spacer plate may be pierced by one or more further holes disposed in a row of which the two illustrated holes are end holes of the row. In such instances all holes in the row would be equally spaced apart, so as to have a centre to centre pitch distance of " p ".

Furthermore some or all of the spacer plates 14 may be replaced by angle sectioned spacers or T-sectioned spacers, wherein one flange of the angle or the head of the T corresponds to the plate 14, provided the other flange of the angle or the stem of the T is appropriately spaced from the immediately adjacent holes 15.

It will be apparent to a man skilled in the art that the structural component illustrated by figures 1 to 5 would display considerable versatility as an element of many and varied, complex, demountable structures. Two such components may be bolted together in end to end or face to face abutment with various degrees of overlap, or may be bolted together at Tee or Cross joints at a great number of positions, merely by appropriately aligning selected fastener holes for the receipt of bolts or other fasteners.

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The structural component illustrated by figures 6 to 9 inclusive may be described as a dual component. It comprises two single components, each according to figures 1-5 inclusive, which require no further description, with each single component's corresponding edge flanges 12 held in a parallel, spaced apart configuration by spacer plates 17 in register with the single components' spacer plates 14, and spacer plates 18 in register with the single components' spacer plates 13. Furthermore the end spacer plates 16 of the two single components are preferably integrally merged as margins of an end spacer plate 20 in the dual component.

Also internal cross-braces 19 may be provided in register with one or more of the pairs of spacer plates 17, to further rigidify the dual component.

The spacer plates 17 and 18 and the end spacer plate 20 are such that the centre lines of the rows of holes in the corresponding flanges 12 of the single components are spaced by a whole number multiple of the pitch distance "p", which may or may not be the same whole number multiple applicable to the distance between the rows of holes in the side flanges 11 of the single components.

Claims

1. A fabricated structural component having five substantially planar faces corresponding to five faces of a an elongated rectangular prism, namely an elongated side face, including two longitudinally extending edge margins, two elongated edge faces, and two end faces;

wherein each said side face is pierced by a plurality of fastener clearance holes arranged in two straight rows, each extending longitudinally of a respective one of said margins, wherein the holes in each row in said side face have a constant centre to centre pitch distance, wherein the distance from the centre of each end hole in each row of holes in said side face to a respectively adjacent end face of the component is substantially one half of said pitch distance, wherein the distance from the centre line of each row of holes in said side face to a respectively adjacent edge face of the component is substantially one half of said pitch distance, and wherein the centre lines of the rows of holes in said side face are separated by a distance substantially equal to a whole number multiple of said pitch distance;

wherein each said edge face is pierced by a plurality of fastener clearance holes arranged in a straight row extending longitudinally of said each edge face, wherein the centre to centre distance between the holes in the row in said each edge face equals said pitch distance, wherein the distance from the centre of each end hole in the row of holes in said each edge face to a respectively adjacent end face of the component is substantially one half of said pitch distance, and wherein the distance from the centre line of the row of holes in said each edge face to the side face of the component is substantially one half of said pitch distance; and

wherein each end face is pierced by at least two fastener clearance holes, wherein the distance from the centre of each of said at least two holes in each end face to said side face is substantially one half of said pitch distance and wherein the distance from the centre of each of said at least two holes in each

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end face to a respectively adjacent edge face is substantially one half of said pitch distance.

2. A structural component according to claim 1 comprising two
5 identical, elongated angle sectioned elements, each comprising a side flange and
an edge flange, two end plates, each extending from an end of one angle
sectioned element to a corresponding end of the other angle sectioned element
and a plurality of discrete and spaced apart spacers extending between and
welded to co-planar side flanges of the two angle sectioned elements, whereby
10 the two angle sectioned elements are held rigidly together in a parallel, spaced
apart configuration, wherein each side flange constitutes a margin of said side
face of the component, wherein each edge flange constitutes an edge face of the
component, and wherein said end plates constitute the end faces of the
component.

15

3. A structural component according to claim 2 wherein each spacer
is a plate.

4. A structural component according to claim 2 wherein at least one
20 of said spacers is T-sectioned.

5. A structural component according to claim 2 wherein at least one
of said spacers is angle sectioned.

25 6. A fabricated structural component, having six substantially planar
faces corresponding to the sides of an elongated rectangular prism, comprising
two single components, each according to any one of the preceding Claims,
united as a dual component by a plurality of discrete, spaced apart spacer
means, such that corresponding edge faces of the two single components are
30 spaced apart and co-planar, and wherein the spacer means are such that the

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distance between the centre lines of the rows of holes in each pair of corresponding edge faces is a whole number multiple of said pitch distance.

7. A fabricated structural component according to claim 6 wherein
5 said spacer means further comprise at least one internal cross brace.

8. A structural component according to claim 6 wherein the end faces of the single components at corresponding ends thereof are merged into a single end face at each end of the dual component.

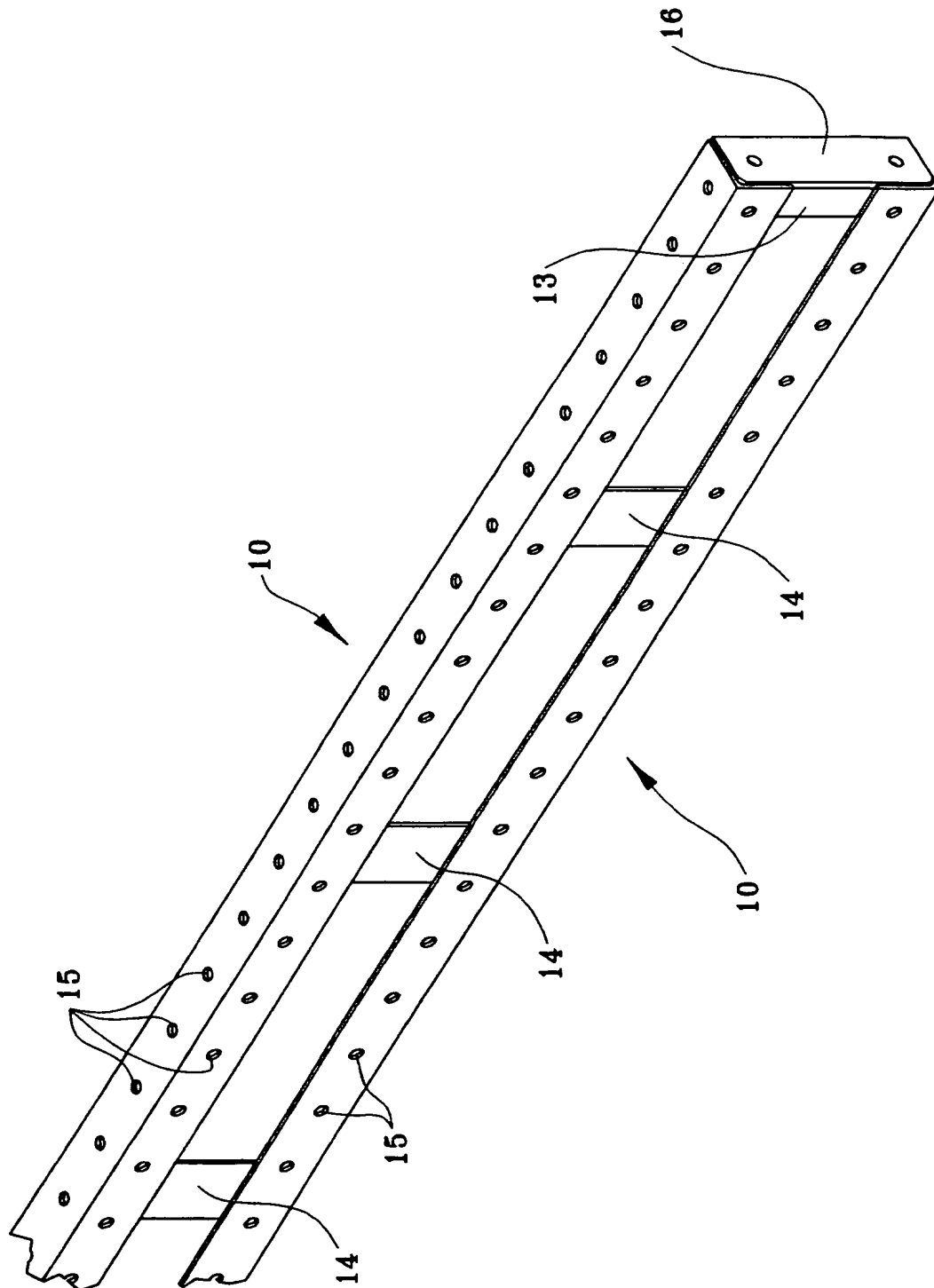


Fig. 1

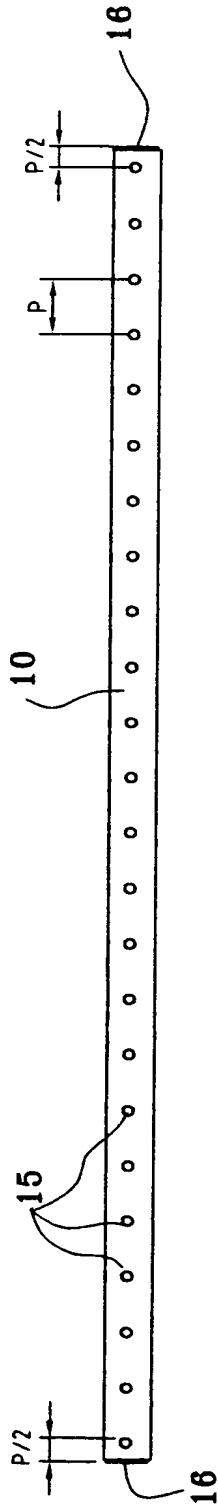


Fig. 3

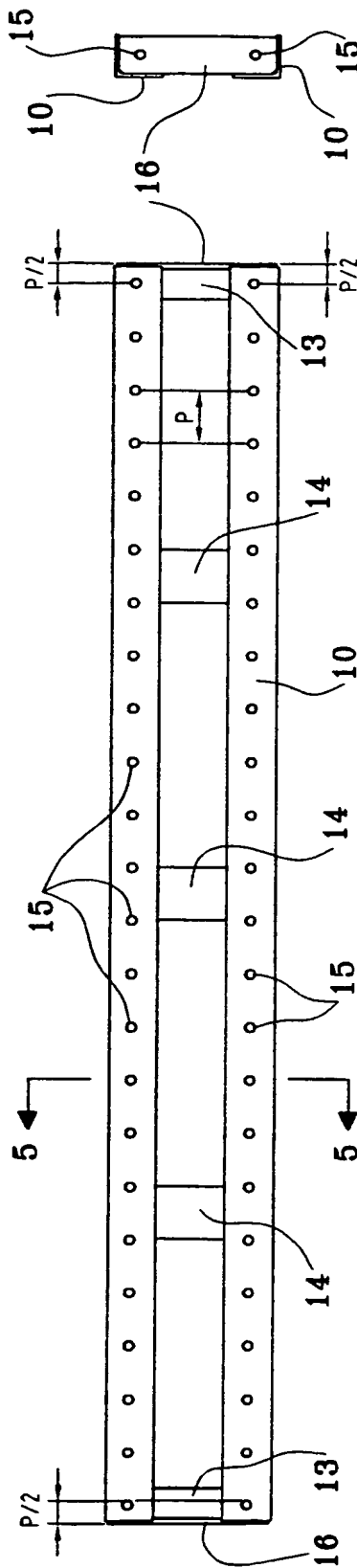


Fig. 2

Fig. 4

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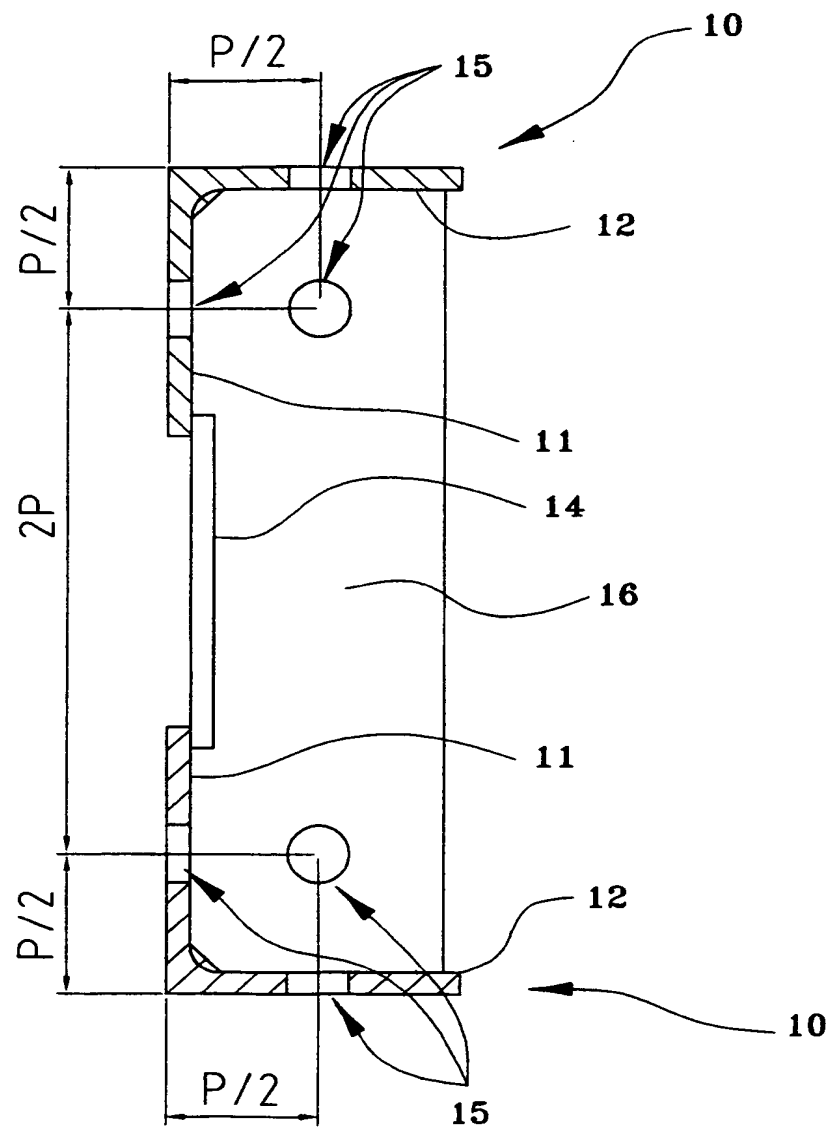


Fig. 5

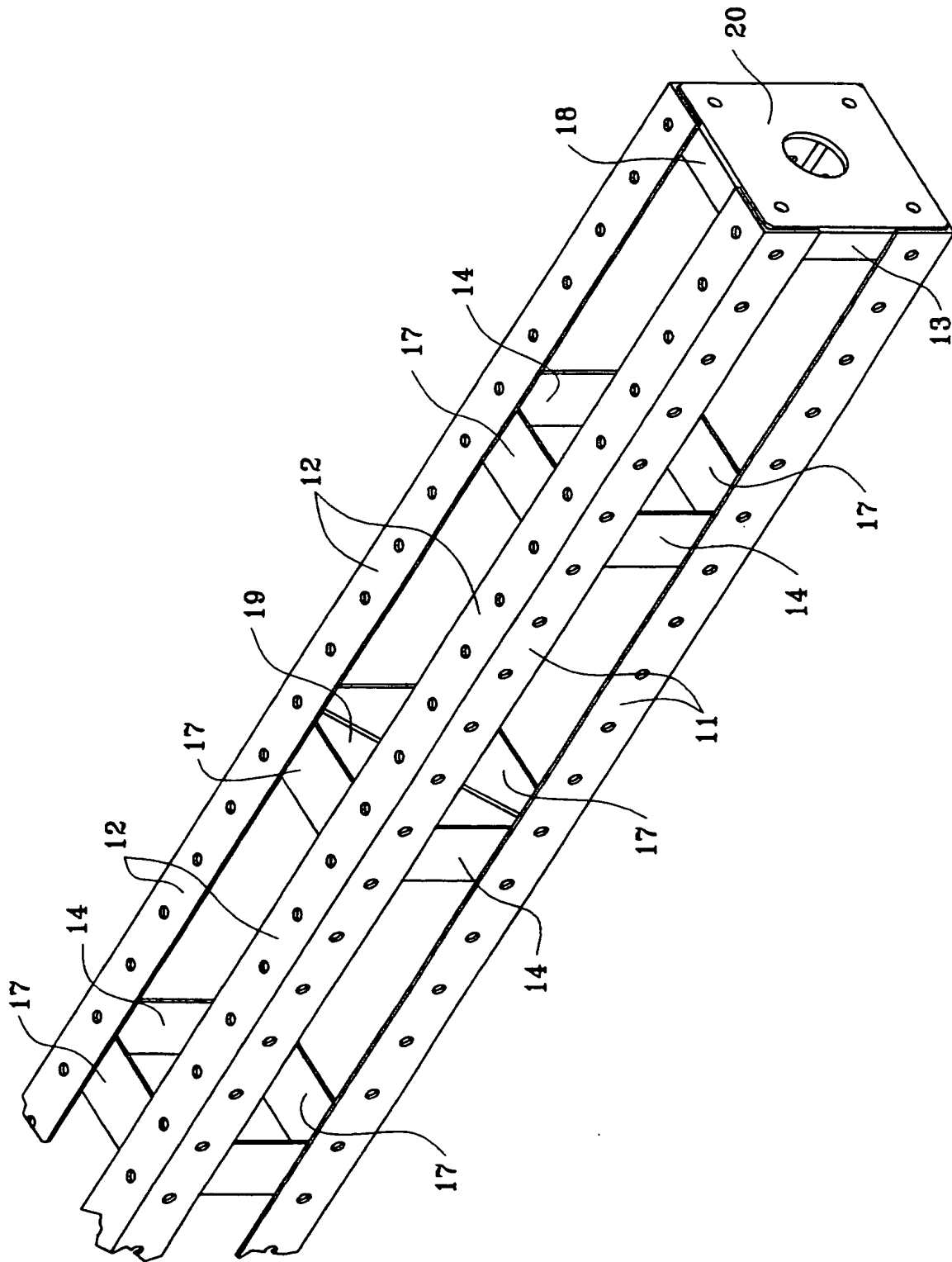


Fig. 6

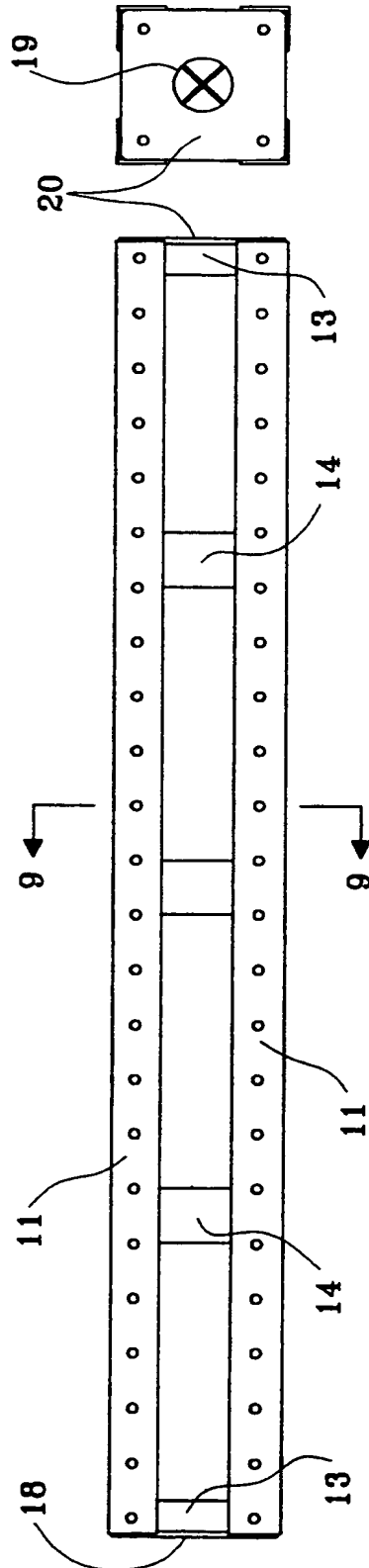


Fig. 7

Fig. 8

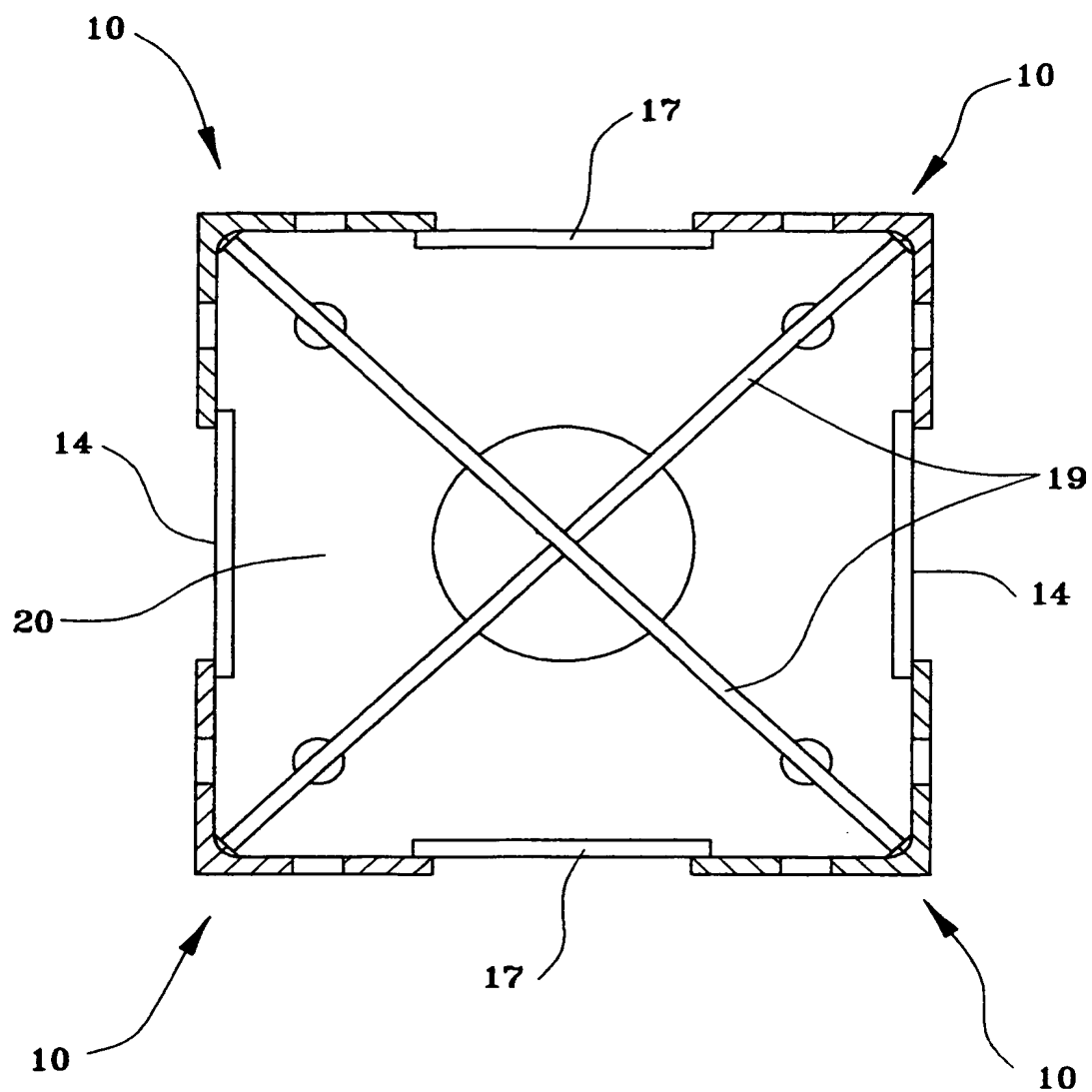


Fig. 9

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU00/00036

A. CLASSIFICATION OF SUBJECT MATTER												
Int. Cl. ⁷ : E04H 12/10, E04C 3/08												
According to International Patent Classification (IPC) or to both national classification and IPC												
B. FIELDS SEARCHED												
Minimum documentation searched (classification system followed by classification symbols) E04C, E04G, F16S												
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU IPC E04C 3/08, E04H 12/10												
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DERWENT, JAPIO elongate, joist, girder, column, post, upright, aperture, opening, hole, array, line, row, meccano												
C. DOCUMENTS CONSIDERED TO BE RELEVANT												
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
X	US 4964256 A (McCracken) 23 October 1990 Column 2, line 26 to Column 3, line 39 and Figures 1 to 5	1 to 8										
A	AU 19176/83 A (John Lysaught (Australia) Ltd) 29 March 1984											
A	DD 216980 A (Ball Montage OST) 2 January 1985											
<input type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex												
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"P" document published prior to the international filing date but later than the priority date claimed												
Date of the actual completion of the international search 7 March 2000		Date of mailing of the international search report 15 MAR 2000										
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929		Authorized officer COLIN FITZGIBBON Telephone No : (02) 6283 2226										

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU00/00036

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

**Patent Document Cited in Search
Report**

Patent Family Member

US	4964256	AU	68157/90	CA	2026397	EP	0436277
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END OF ANNEX

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU00/00036

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. ⁷: E04H 12/10, E04C 3/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E04C, E04G, F16S

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU IPC E04C 3/08, E04H 12/10

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DERWENT, JAPIO elongate, joist, girder, column, post, upright, aperture, opening, hole, array, line, row, meccano

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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☐ Further documents are listed in the continuation of Box C ☒ See patent family annex

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Date of the actual completion of the international search

7 March 2000

Date of mailing of the international search report

15 MAR 2000

Name and mailing address of the ISA/AU

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU00/00036

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Patent Document Cited in Search Report				Patent Family Member			
US	4964256	AU	68157/90	CA	2026397	EP	0436277

END OF ANNEX

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 08 JUN 2001

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Applicant's or agent's file reference GWN:#30634 2130685	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/AU00/00036	International Filing Date (<i>day/month/year</i>) 24 January 2000	Priority Date (<i>day/month/year</i>) 9 June 1999
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ E04H 12/10, E04C 3/08		
Applicant PRESTON, John Clement		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.																								
2.	<p>This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheet(s).</p>																								
3.	<p>This report contains indications relating to the following items:</p> <table border="0"> <tr> <td>I</td> <td><input checked="" type="checkbox"/></td> <td>Basis of the report</td> </tr> <tr> <td>II</td> <td><input type="checkbox"/></td> <td>Priority</td> </tr> <tr> <td>III</td> <td><input type="checkbox"/></td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td>IV</td> <td><input type="checkbox"/></td> <td>Lack of unity of invention</td> </tr> <tr> <td>V</td> <td><input checked="" type="checkbox"/></td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td>VI</td> <td><input type="checkbox"/></td> <td>Certain documents cited</td> </tr> <tr> <td>VII</td> <td><input type="checkbox"/></td> <td>Certain defects in the international application</td> </tr> <tr> <td>VIII</td> <td><input type="checkbox"/></td> <td>Certain observations on the international application</td> </tr> </table>	I	<input checked="" type="checkbox"/>	Basis of the report	II	<input type="checkbox"/>	Priority	III	<input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	IV	<input type="checkbox"/>	Lack of unity of invention	V	<input checked="" type="checkbox"/>	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	VI	<input type="checkbox"/>	Certain documents cited	VII	<input type="checkbox"/>	Certain defects in the international application	VIII	<input type="checkbox"/>	Certain observations on the international application
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Date of submission of the demand 22 December 2000	Date of completion of the report 29 May 2001
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer COLIN FITZGIBBON Telephone No. (02) 6283 2226

I. Basis of the report1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
 pages , as amended (together with any statement) under Article 19,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the sequence listing part of the description:
 pages , as originally filed
 pages , filed with the demand
 pages , received on with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, was on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 3, 4	YES
	Claims 1, 2, 5 to 8	NO
Inventive step (IS)	Claims	YES
	Claims 1 to 8	NO
Industrial applicability (IA)	Claims 1 to 8	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purposes of this report:

D1 US 4964256 A (McCracken)

Novelty (N) Claims 1, 2, 5 to 8

Claim 1

The invention as defined in Claim 1 is not considered to be novel in light of D1. This citation discloses a fabricated structural component (beam members 10) having five substantially planar faces corresponding to five faces of an elongated rectangular prism, namely an elongated side face (24), including two longitudinally extending edge margins, two elongated edge faces (20a, 20b) and two end faces (16), wherein each face is pierced by a plurality of fastener clearance holes (26, 34, 48) arranged in straight lines. The distance between clearance holes, and between the clearance holes and the edge of the component as defined in the claim, is considered to be explicitly disclosed by the figures.

Claims 2 and 5

The invention as defined in Claim 2 is also explicitly disclosed by Figure 5 of D1, wherein the component comprises two identical elongated angle section elements (14a, 14b), separated by a plurality of discrete and spaced apart spacers (block 42). The additional feature of Claim 5 ie the spacer being angle sectioned, is also explicitly disclosed by Figure 5 of D1.

Claim 6

The fabricated structural component as defined in Claim 6, is considered not to be novel in light of D1. Figure 5 discloses the component comprising two single components (14a, 14b), united as a dual component by a plurality of discrete spaced apart spacer means (42, Column 3, lines 12 to 19). The distance between the centre lines of the holes is considered to be disclosed by the drawing.

Claims 7 and 8

Spacer 42 of D1 comprises at least one internal brace, as defined in Claim 7, and the end faces (38) of the single components (14a, 14b) are merged into a single face (end plate 16) at each end of the dual component, as defined in Claim 8. Neither of these claims are considered to be novel.

Cont'd

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of V Reasoned StatementInventive Step (IS) Claims 1 to 8

Claims 1, 2, 5 to 8

As above

Claims 3, 4

The inventions as defined in Claims 3 and 4 are not considered to involve an inventive step in light of D1. Although the citation does not explicitly disclose the spacer being a plate and the spacer is T-sectioned respectively, the selection of the section of the spacer is considered to be part of the common general knowledge of the art, and not essential features of the invention. Further, these features are not essential to the working of the invention, hence their inclusion does not involve an inventive step.

CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10)

Applicant(s): John Clement Preston

531 Rec'd PCT

10/009714

Docket No.

07 DEC 2001

Serial No.

Filing Date

Examiner

Group Art Unit

Invention: **MULTI-PURPOSE STRUCTURAL COMPONENT**

I hereby certify that the following correspondence:

New U.S. National Stage Patent Application

(Identify type of correspondence)

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to: The Assistant Commissioner for Patents, Washington, D.C. 20231 on

December 7, 2001*(Date)*Patrice Michele Potter*(Typed or Printed Name of Person Mailing Correspondence)*
*(Signature of Person Mailing Correspondence)*EL 731283972 US*("Express Mail" Mailing Label Number)***Note: Each paper must have its own certificate of mailing.**

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: FREEHILLS CARTER SMITH & BEADLE MLC Centre Martin Place SYDNEY NSW 2000		PCT NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)	
Applicant's or agent's file reference GWN:#30634 2130685		Date of mailing day/month/year 31 MAY 2001	
International Application No. PCT/AU00/00036		International Filing Date 24 January 2000	Priority Date 9 June 1999
Applicant PRESTON, John Clement			

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translations to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide

Name and mailing address of the IPEA/AU
AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer

COLIN FITZGIBBON
Telephone No. (02) 6283 2226

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference GWN:#30634 2130685	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/AU00/00036	International Filing Date (day/month/year) 24 January 2000	Priority Date (day/month/year) 9 June 1999
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ E04H 12/10, E04C 3/08		
Applicant PRESTON, John Clement		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
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|------|-------------------------------------|---|
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| IV | <input type="checkbox"/> | Lack of unity of invention |
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| VI | <input type="checkbox"/> | Certain documents cited |
| VII | <input type="checkbox"/> | Certain defects in the international application |
| VIII | <input type="checkbox"/> | Certain observations on the international application |

Date of submission of the demand 22 December 2000	Date of completion of the report 29 May 2001
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU00/00036

I. Basis of the report

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pages , filed with the demand,
pages , received on with the letter of☐ the drawings, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU00/00036

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

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Cont'd

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU00/00036

Supplemental Box

to be used when the space in any of the preceding boxes is not sufficient)

Continuation of V Reasoned StatementInventive Step (IS) Claims 1 to 8

Claims 1, 2, 5 to 8

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Claims 3, 4

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